REGULATION 6.44 Standards of Performance for Existing Commercial Motor Vehicle and Mobile Equipment Refinishing Operations

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of Volatile Organic Compound (VOC) emissions from existing commercial motor vehicle and mobile equipment refinishing operations.

SECTION 1 Applicability

This regulation applies to those existing commercial facilities making spot repairs, panel repairs, refinishing of parts and/or the refinishing of the entire motor vehicle or mobile equipment. It is in effect for all facilities in operation or under construction prior to the date of adoption.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

2.1 "Adhesion promoter" means a coating used to promote adhesion of a topcoat on surfaces such as trim moldings, door locks, door sills, or any coating which provides adhesion to plastic substrates, where sanding is not practical.

2.2 "Aerosol coating products" means a mixture of resins, pigments, liquid solvents and gaseous propellants, packaged in a disposable can for small, hand-held spraying applications.

2.3 "Basecoat" means a pigmented topcoat which is the first topcoat applied as part of a multiple stage topcoat system.

2.4 "Basecoat/clearcoat system" means a topcoat system composed of a pigmented basecoat portion and a transparent and clear overcoat portion.

2.5 "Capture system" means the equipment including, but not limited to, booths, ducts, dryers or ovens, fans, and hoods that contains, collects, and transports an air pollutant to a control device.

2.6 "Catalyst" means a substance whose presence enhances the reaction between chemical compounds.

2.7 "Chemical Abstract Service (CAS) registration number" means that unique identification number, usually three parts, given to each chemical product or component by the Chemical Abstract Service.

2.8 "Clearcoat" means a topcoat which contains no pigments or only transparent pigments and which is the final topcoat applied as a part of a multiple stage topcoat system.

2.9 "Color match" means the ability of a repair coating to blend into an existing coating so that color difference is not visible.

2.10 "Excluded VOC" means any of the compounds expressly excluded from the definition of VOC in Regulation 1.02.

2.11 "Elastomeric material" means topcoats and primers that are specifically formulated for application over flexible parts such as filler panels and elastomeric bumpers.

2.12 "Electrostatic application" means the application of charged atomized paint droplets which are deposited by electrostatic attraction.

2.13 "Extreme performance coating" means any coating used on the surface of a motor vehicle, mobile equipment or their parts or components which, during intended use, is exposed to either of the following conditions:

2.13.1 Industrial grade detergents, cleaners or abrasive scouring agents, or

2.13.2 Extreme environmental conditions during the vehicle's principle use.

2.14 "Graphic design application" means the application of logos, letters, lines, stripes, numbers and/or other graphics to a painted surface, with or without the use of a template.

2.15 "Ground support vehicles" means vehicles used in support of aircraft activities at airports.

2.16 "Group I vehicles and equipment" means passenger cars, large-sized truck cabs and chassis, light and medium duty trucks and vans, motor homes, recreational vehicles, motorcycles, camper shells, pick-up truck toppers, and light and medium duty trailers that require special color-matched coatings.

2.17 "Group II vehicles" means buses and mobile equipment.

2.18 "High-volume, low pressure (HVLP) spray" means equipment used to apply coatings by means of a spray gun which typically operates at less than 10 psig applied air pressure.

2.19 "Large-sized truck" means a truck having a manufacturer's gross vehicle weight rating of more than 8500 pounds.

2.20 "Material Safety Data Sheet" (MSDS) means the chemical, physical, technical and safety information document supplied by the manufacturer of the coating, solvent or other chemical product, usually through his distribution network or retailers.

2.21 "Metallic/iridescent topcoat" means any coating which contains more than 5 g/l (0.042 lb/gal) of metal or iridescent particles, as applied, where such particles are visible in the dried coating.

2.22 "Midcoat" means a semi-transparent topcoat which is a middle topcoat applied as part of a multiple topcoat system.

2.23 "Mobile equipment" means any equipment which may be drawn or is capable of being driven on a roadway, including but not limited to: truck bodies, truck trailers, cargo vaults, utility bodies, construction equipment (mobile cranes, bulldozers, concrete mixers), farming equipment (tractors, plows, pesticide sprayers), and miscellaneous equipment (street cleaners, golf carts, ground support vehicles, tow motors, fork lifts).

2.24 "Multiple stage topcoat system" means any basecoat/clearcoat topcoat system or any three-stage or more topcoat system manufactured as a system, and used as specified by the manufacturer.

2.25 "Panel" means a complete section (e.g., hood, door), which typically is approximately nine square feet.

2.26 "Precoat" means any coating which is applied to bare metal primarily to deactivate the metal surface for corrosion resistance to a subsequent water-base primer.

2.27 "Pretreatment wash primer" means any coating which contains a minimum of 0.5% acid by weight, as necessary to provide surface etching and is applied directly to bare metal surfaces to provide corrosion resistance and adhesion.

2.28 "Primer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat.

2.29 "Primer sealer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, color uniformity and to promote the ability of an undercoat to resist penetration by the topcoat.

2.30 "Primer surfacer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, and which promotes a uniform surface by filling in surface imperfections.

2.31 "Reducer" means the solvent used to thin enamel.

2.32 "Refinishing" means any coating of vehicles, their parts and components, or mobile equipment, including partial body collision repairs, for the purpose of protection or beautification and which is subsequent to the original coating applied at a manufacturing plant coating line.

2.33 "Small-sized truck" means any motor vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less and which is designed primarily for the purposes of transportation of property or is a derivative of such vehicle, or is available with special features enabling on-street or off-highway operation and use.

2.34 "Specialty coating" means any coating which is necessary due to unusual job performance requirements. The coating includes, but is not limited to: weld-through primer, adhesion promoter, uniform finish blender, elastomeric material, gloss flattener, bright metal trim repair, antiglare coating, and safety related coating.

2.35 "Spot/panel repair" means the non assembly line process of repairing and restoring a portion of a motor vehicle or mobile equipment to predamaged condition.

2.36 "Three-stage coating system" means a topcoat system composed of a pigmented basecoat portion, a semi-transparent midcoat portion, and a transparent clearcoat portion.

2.37 "Topcoat" means any coating applied over a primer or an original finish for the purpose of protection or appearance. For the purpose of this regulation, basecoat/clearcoat and multiple-stage coating systems shall be considered topcoats.

2.38 "Touch-up operation" means the application of any coating by brush, air brush or aerosol spray to repair minor surface damage or imperfections.

2.39 "Transfer efficiency" means the ratio of the amount of coating solids adhering to the object being coated to the total amount of coating solids used in the application process, expressed as a percentage.

2.40 "Truck" means a motor vehicle designed, used, or maintained primarily for the transportation of property.

2.41 "Van" means a closed truck for carrying property or persons.

2.42 "Volatile Organic Compound" (VOC) means any organic compound which would be emitted during use, application, curing or drying of a solvent or surface coating. Some organic compounds are not considered to be ozone precursors and shall not be considered a part of the coating or solvent for this regulation. Regulation 1.02 identifies these excluded VOCs.

2.43 "Waterborne primer" means any primer using water as the primary solids suspension agent, usually containing 2.5 lbs/gal or less of VOC, as applied.

SECTION 3 Exemptions

3.1 The following activities are exempted from all requirements of this regulation:

3.1.1 Application of aerosol coating products,

3.1.2 Graphic designs such as the application of letters, lines, logos, numbers, striping, etc. covering less than 10% of the total painted surface of the vehicle,

3.1.3 Original Equipment Manufacturer (OEM) coatings applied at manufacturing or assembly plants that are subject to Regulation 6.36 or 7.02, or 40 CFR Part 60 Subpart MM,

3.1.4 Touch-up operations,

3.1.5 Application of waterborne coatings only that contain less than 2.0 lbs/gal of VOC, as applied,

3.1.6 Activities that are for personal use, hobbyist, or other non-commercial operation, and

3.1.7 Operations that use less than 25 gallons of coatings per year.

3.2 Small facilities that perform minimal coating operations are exempt from Section 8 only. These facilities must meet all of the following limitations:

3.2.1 On a weekly average basis, the combined refinishing operations shall not exceed the equivalent of the following:

3.2.1.1 One complete Group I motor vehicle refinished, or

3.2.1.2 Four Group I panel or spot repair jobs performed,

3.2.2 On a weekly average basis, not more than four gallons of all Group I coatings combined shall be applied, and

3.2.3 No visible emissions shall leave the applicator's property.

3.3 An exemption under Section 3 does not constitute an exemption from any other District regulation.

SECTION 4 Standards for VOC

Effective on the dates specified, a person applying coatings to Group I or Group II vehicles and equipment, including parts and components, repairing of partial collision damage or refinishing entire motor vehicles or mobile equipment, shall not apply materials that have a VOC content which exceeds the limits in sections 4.1 and 4.2. Compliance with the VOC limits shall be based on VOC content, including any VOC material added to the original coating supplied by the manufacturer, less water and exempt solvent, as applied to the surface that is being coated. Appendix A provides equations to calculate VOC content of coatings and compound coatings.

4.1 Group I Vehicles: Group I vehicles, their parts and components, whether existing or replacement parts, shall not be refinished with a coating which has a VOC content in excess of the limits in sections 4.1.1 or 4.1.2.

4.1.1 Effective May 1, 1994, no coatings shall be used which have a VOC content in excess of 6.5 pounds of VOC per gallon of coating as applied, less water and excluded VOC solvents and reducers, unless the conditions of section 4.3 are met.

4.1.2 Effective May 1, 1995, no coating shall be used with a VOC content in excess of the following limits, expressed as pounds of VOC per gallon of coating, as applied, unless the conditions of section 4.3 are met:

Coating	VOC lb/gal
Pretreatment wash primer	6.5
Precoat	5.5
Primer/primer surfacer	4.8
Primer sealer	4.6
Topcoat	5.2
Metallic/iridescent topcoat	5.2
Extreme performance	6.2

4.2 Group II Vehicles: Group II vehicles, or their existing parts and components, or replacement parts or components, shall not be refinished with a coating which has a VOC content in excess of the limits in sections 4.2.1, or 4.2.2.

4.2.1 Effective May 1, 1994, no coatings shall be used which have a VOC content in excess of 6.5 pounds of VOC per gallon of coating as applied, less water and excluded VOC solvents and reducers, unless the conditions of section 4.3 are met.

4.2.2 Effective May 1, 1995, no coating shall be used with a VOC content in excess of the following limits, expressed as pounds of VOC per gallon of coating, as applied, unless the conditions of section 4.3 are met:

Coating	VOC lb/gal
Pretreatment wash primer	6.5
Precoat	5.5
Primer/primer surfacer	2.8
Primer sealer	3.5
Topcoat	3.5
Metallic/iridescent topcoat	3.5
Extreme performance	6.2

4.3 The limitations of VOC content in sections 4.1 and 4.2 shall not be exceeded unless:

4.3.1 Emissions are controlled to an equivalent level by air pollution control equipment,

4.3.2 The efficiency of the control equipment is a minimum of 85%, and

4.3.3 The control equipment has been approved by the District and permits issued.

4.4 Specialty coatings shall not be applied unless:

4.4.1 The VOC content is equal to or less than 7.0 pounds of VOC per gallon of coating, as applied, and

4.4.2 The application of all such coatings, except safety related coatings, shall not exceed 10% of all coatings applied, on a weekly basis.

4.5 Surface cleaners, consisting of general wiping cleaners, solvents, wax removers, grease removers, road-tar removers, mold-release agent removers, and other similar materials, must meet the following requirements:

4.5.1 General purpose surface cleaners shall have a VOC content that does not exceed:

4.5.1.1 6.5 pounds per gallon prior to May 1, l995, and

4.5.1.2 1.7 pounds per gallon on and after May 1, l995, and

4.5.2 Any cleaner, solvent, or remover material may be used for specific, hard to clean surfaces provided that:

4.5.2.1 Material is dispensed from a hand-held spray bottle, and

4.5.2.2 Usage of the solvent or cleaner does not exceed 35% of the total monthly usage of all surface cleaners.

SECTION 5 Equipment Standards

All coating operators that use more than 25 gallons of coatings per year shall perform those operations using the following equipment:

5.1 Spraying operations shall be performed in an enclosed spray booth or an enclosed spray area which provides, as a minimum,

5.1.1 A series of exhaust filters, wet or dry, that have a 90% particulate control efficiency, and

5.1.2 Proper maintenance of the equipment in accordance with the manufacturer's recommendations or, in the absence of the above, reasonable care.

5.2 Spray coating operations involving small surface areas, typically called priming, prepping, burn-in and cut-in activities, may be performed in a dedicated spray area other than the spray booth pursuant to section 5.1. These dedicated areas must meet the following requirements:

5.2.1 The preparation area must be ventilated with sufficient airflow and reasonable capture of overspray to assure that the overspray is exhausted through a dedicated ventilation system.

5.2.2 The ventilation system shall capture and remove overspray from the area through a filtered exhaust as in section 5.1.

5.2.3 Dedicated areas may be site-constructed facilities, purchased units or portable units provided that the intent of a controlled and filtered exhaust system is accomplished.

5.2.4 If the preparation area is equipped with a recirculation system rather than direct exhaust, the system must include a carbon adsorption system prior to recirculating the air back into the area. The carbon shall be changed at the manufacturer's recommended intervals to minimize solvent emissions.

5.3 All non-spray applied-coating operations shall be performed in a dedicated and ventilated area pursuant to section 5.1 or 5.2.

5.4 Effective May 1, 1995, spraying equipment shall have a minimum transfer efficiency of 65% at eight inches from the surface that is being coated. Compliance may be achieved by any of the following:

5.4.1 Electrostatic application equipment operated and maintained in accordance with the manufacturer's recommendations,

5.4.2 HVLP spray equipment operated and maintained in accordance with the manufacturer's recommendations, or

5.4.3 Any other coating application equipment which has been satisfactorily demonstrated to be capable of achieving a minimum of 65% efficiency and approved by the District.

5.5 VOC pollution control equipment, if required for compliance with Section 4, shall be appropriately installed, maintained and operated in accordance with the manufacturer's recommendations. The minimum efficiency of the control device shall be 85%.

5.6 Effective May 1, l995, spray and other equipment cleanup shall be accomplished in an apparatus specifically designed to minimize evaporation of VOC materials to the atmosphere. Non-enclosed gun cleaners, etc. may be used provided that the vapor pressure of the cleaning solvent is less than 100 mmHg at 68°F and the used solvent is contained for subsequent disposal by authorized means.

SECTION 6 Prohibitions

6.1 No person shall specify or require for use the application of any coating if such use results in a violation of this regulation. This prohibition is applicable to all contracts wherein a coating is to be applied at any location within Jefferson County, Kentucky. This prohibition shall not apply if the coating is to be utilized at surface coating facilities where control equipment has been installed to meet the requirements of section 5.5.

6.2 No person shall sell within Jefferson County, Kentucky any coating if such product exceeds any of the provisions of this regulation or would exceed any provision as typically applied. This prohibition is applicable to the sale of any coating which is to be applied at any location within Jefferson County unless the coating is to be used for an activity that is exempt under section 3.1. This prohibition shall not apply if the coating is to be utilized at surface coating facilities where control equipment has been installed to meet the requirements of section 5.5.

6.3 Cleaning of equipment by spraying solvent through the spray gun with no reasonable attempt to reclaim the used solvent is prohibited.

SECTION 7 Operating Requirements

The owner/operator shall implement good housekeeping practices which include, but are not limited to, the following:

7.1 All equipment shall be maintained in accordance with the manufacturer's recommendations,

7.2 All solvents shall be stored in closed containers,

7.3 All waste coatings, used automotive fluids, spray booth filters, etc. shall be stored in closed containers prior to disposal by authorized means, and

7.4 Storage of cloth or paper products used for solvent surface preparation and cleanup shall be stored in closed containers prior to disposal by authorized means.

7.5 A person using pressure pots shall use either:

7.5.1 Bag-type liners to aid cleanup and minimize cleaning solvent use,

7.5.2 Insert containers to aid cleanup and minimize cleaning solvent use, or

7.5.3 Other reasonable practices to reduce the amount of cleaning solvent used.

7.5 Equipment cleanup shall be performed with appropriate methods to minimize the use of solvents. Reasonable effort must be made to reclaim the bulk of the used solvents. Absolutely no cleaning shall be effected by the direct spraying of solvent into the atmosphere.

7.6 Personnel performing spraying operations must be trained to properly position a spray gun to minimize overspray.

7.7 Reasonable effort shall be employed to schedule operations of a similar nature to significantly reduce overall VOC material consumption.

SECTION 8 Reporting and Recordkeeping Requirements

Any person subject to this regulation shall comply with the following requirements as a minimum.

8.1 Refinishers shall maintain:

8.1.1 A current list of all coatings, solvents, reducers, additives, and any other VOC containing material in use at the facility. This list shall include, but is not limited to, the following information:

8.1.1.1 Name and appropriate identification of coating, catalyst, hardener, reducer, etc. used;

8.1.1.2 Mix ratio of components used, and

8.1.1.3 VOC content of coating, as applied, less water and excluded solvents, in pounds per gallon.

8.1.2 Daily records that shall include:

8.1.2.1 Identification of applied coatings pursuant to section 8.1.1.1, and

8.1.2.2 Quantity of each coating applied.

8.1.3 Monthly records that shall include:

8.1.3.1 Type of solvent used for cleanup or surface preparation, and

8.1.3.2 Quantity of each solvent, cleaner, etc. used.

8.1.4 MSDS or other data sheets provided by the material manufacturer or its agent for each item listed pursuant to section 8.1.1 and shall include as a minimum:

8.1.4.1 Designation of VOC content as supplied, expressed in lbs/gal, less water and excluded solvents,

8.1.4.2 Designation of all hazardous and/or toxic components. Designation shall include, as a minimum: the CAS registration number of the component; the weight percent of the component; and the weight of the product, expressed in lbs/gal, or alternately, the specific gravity of the product, and

8.1.4.3 Other pertinent physical and chemical data necessary to determine compliance with District regulations.

8.2 Suppliers or jobbers of coatings, solvents and related materials containing VOC shall:

8.2.1 Make and maintain appropriate records of all sales to refinishing operations having District permits, and

8.2.2 Make and maintain records of all sales to exempt or hobbyist refinishing operations including:

8.2.2.1 Date of sale,

8.2.2.2 Customer's name,

8.2.2.3 Customer's business name, if applicable,

8.2.2.4 Customer's business address, address of residence if same as business, and

8.2.2.5 Identification of products and quantities sold.

8.3 Records specified in this section shall be retained for five years and readily available for inspection by EPA, the Cabinet, the District, and other responsible parties commencing upon adoption of this regulation.

Adopted v1/2-2-94; effective 2-2-94, v2/9-20-95.

Appendix A To Regulation 6.44

Standards of Performance for Existing Commercial Motor Vehicle and Mobile Equipment Refinishing Operations

VOC content shall be given and/or calculated in lbs/gal.

Calculation 1:

The VOC content of a basecoat/topcoat system shall be calculated according to the following equation:

$$VOC_{ms} = \frac{VOC_{bc} + 2VOC_{cc}}{3}$$

where:

VOC_{ms} = the composite VOC content, less water and less exempt compounds, to be used for compliance determination under the multistage topcoat system coating category.

VOC_{bc} = the VOC content, less water and less exempt compounds as applied, of any given basecoat.

VOC_{cc} = the VOC content, less water and less exempt compounds as applied, of any given clearcoat.

Calculation 2:

The VOC content per gallon of any coating, less water and less exempt compounds, shall be calculated by the following equation:

$$Content = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

where:

Pounds of VOC per gallon of coating, less water and less exempt compounds, is the weight of VOC per combined volume of VOC and coating solids.

W_s = weight of volatile compounds in pounds.

W_w = weight of water in pounds.

W_{es} = weight of exempt compounds in pounds.

V_m = volume of material in gallons.

V_w = volume of water in gallons.

V_{es} = volume of exempt compounds in gallons.

Calculation 3:

The VOC content of any coating shall be calculated by the following equation:

$$Content = \frac{W_s - W_w - W_{es}}{V_m}$$

where:

W_s = weight of volatile compounds in pounds.
W_w = weight of water in pounds.
W_{es} = weight of exempt compounds in pounds.
V_m = volume of material in gallons.

Calculation 4:

The VOC content of a three-stage topcoat system shall be calculated according to the equation:

$$VOC_{ms} = \frac{VOC_{bc} + VOC_{mc} + 2VOC_{cc}}{4}$$

where:

A three-stage coating system is a topcoat system composed of a basecoat portion, a midcoat portion, and a transparent clearcoat portion.

VOC_{ms} = the composite VOC content, less water and less exempt compounds, to be used for compliance determination under the multistage topcoat system coating category.
VOC_{bc} = the VOC content, less water and less exempt compounds as applied, of any given basecoat.
VOC_{mc} = the VOC content, less water and less exempt compounds as applied, of any given midcoat.
VOC_{cc} = the VOC content, less water and less exempt compounds as applied, of any given clearcoat.